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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO. <i>mk</i>
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EXAMINER

ART UNIT	PAPER NUMBER <i>7</i>
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DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/576,681

Applicant(s)

CHIBA ET AL.

Examiner

Lynne R. Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

1. Claims 1 and 4 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 and 2 of copending Application No. 09/448127. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 3 and 6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2-4 of copending

Application No. 09/448127. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim a method of laser forming a mark in the same manner. Although instant claim 3 embodies a broader range of energy densities (1.0 to 15.0 J/cm²) it includes the 1.0 to 3.7 J/cm² claimed in the '127 patent.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Truax et al. (USPN 5175774).

Truax teaches a microdot mark formed by a laser beam on a surface of a wafer wherein the dot size is at least 2 micrometers (height and length) and are formed up to the edge of the wafer (figure 2 and col 6 lines 49-63) however, the mark may be located at any location (col 3 lines 57-61 and col 6 lines 13-19). See also Traux claim 2.

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4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lappalainen et al. (USPN 5632916).

Lappalainen teaches a protruding laser microdot mark having a height of less than 1 micron (col 2 lines 50-53) and a length of less than 100 micrometers (col 3 lines 59-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Truax et al. (USPN 5175774) in view of Asakawa et al. (DE 19810545 A1).

Truax teaches a microdot mark formed by a laser beam on a surface of a wafer wherein the dot size is at least 2 micrometers (height and length) and are formed up to the edge of the wafer (figure 2 and col 6 lines 49-63) however, the mark may be located at any location (col 3 lines 57-61 and col 6 lines 13-19). See also Traux claim 2. However, there is no disclosure marking a bevelled edge of the wafer.

Asakawa teaches laser marking of the bevelled edge of a wafer (abstract, lines 1-3).

It would have been obvious to one of ordinary skill in the art to mark the edge of the wafer, whether beveled or flat to easily identify the wafers for tracking through subsequent processing in a reliable manner (Truax, col 1 lines 5-30) without sacrificing useful wafer area (Truax, col 1 lines 40-45).

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (USPN 4734558) in view of Lappalainen et al. (USPN 5632916).

Nakano teaches a method of forming a mark made by dots on the surface of an article by a pulse laser. Light is homogenized through an optical system, pattern is formed by controlling a liquid crystal mask and irradiating the mask by the homogenized beam, and condensing the beam (col 5 line 36 – col 6 line 22 and col 11 lines 3-28). The energy density of the split beam is greater than 0.6 Joule/cm² (col 7 lines 66-68). Although it is taught that several hundreds of dots (resolving points) are achieved within a length of 3 to 50 millimeters (col 7 lines 54-62), there is no disclosure of the maximum length of the dot. Neither is the energy density disclosed within the range 1.5 to 11 Joule/cm².

Lappalainen teaches a protruding laser microdot mark having a length of less than 100 micrometers (col 3 lines 59-64). The energy density is 1 to 10 J/cm² (col 2 lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a known energy density range (1 to 10 Joule/cm²) to provide sufficient energy to form the desired shape of a small but readable mark (such as 1

micrometer) (Nakano, col 1 lines 10-15) in a fast, flexible, controlled process (Nakano, col 2 lines 43-47 and col 13 lines 6-15).

7. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (USPN 5463200) in view of Azuma et al. (USPN 4861620).

James teaches a method of forming a mark made by dots (figure 6 and col line 65 – col 2 line 1) formed by a pulsed laser comprising the steps of homogenizing an energy distribution of the laser beam emitted (col 4 lines 24-34), forming the desired pattern by controlling a mask having a particular pixel size which corresponds to the size of the dot to be formed (col 5 lines 20-38) and lenslet size which is 80 to 1000 micrometers (col 4 lines 37-40) which condense the beam for each dot (figures 9-13 and col 4 lines 35-60). A liquid crystal mask may be employed (col 7 lines 16-29 and col 8 lines 28-35). See also James claims 1-7. However, there is no disclosure of the energy employed or height or mark size.

Azuma teaches laser marking employing a pulse beam emitting 1.1 to 5 Joule/cm² (col 5 lines 13-25 and col 6 lines 18-41) to form markings 1 micrometer long (col 4 lines 52-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a known energy density range (1.1 to 5 Joule/cm²) to provide sufficient energy to form a recognizable mark of a small but readable size (such as 1 micrometer) (James, col 1 lines 34-42) in a fast, cost effective process (James, col 2 lines 31-45 and col 3 lines 6-10).


Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tanaka (USPN 6160603), Khosropour (USPN 6162651), Shinohara et al. (USPN 5708252), Ishiguro et al. (USPN 5260542), Yamazaki et al. (USPN 5821497), Yamazaki et al. (USPN 4786358) and Kjikawa (USPN 5191187).
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne R. Edmondson whose telephone number is 703-306-5699.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

LRE
April 16, 2001


TOM DUNN
SUPERVISORY PATENT EXAMINER
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